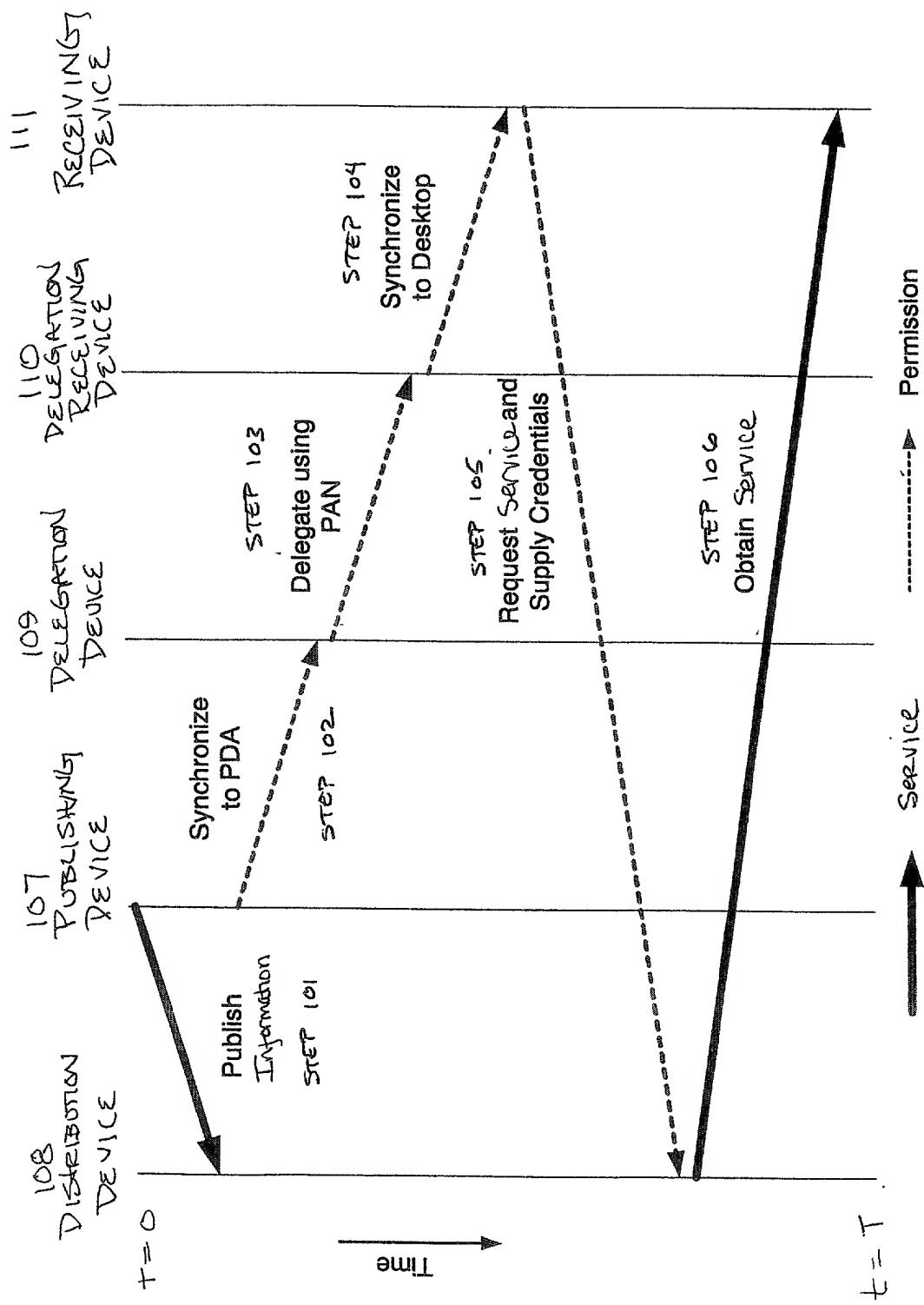
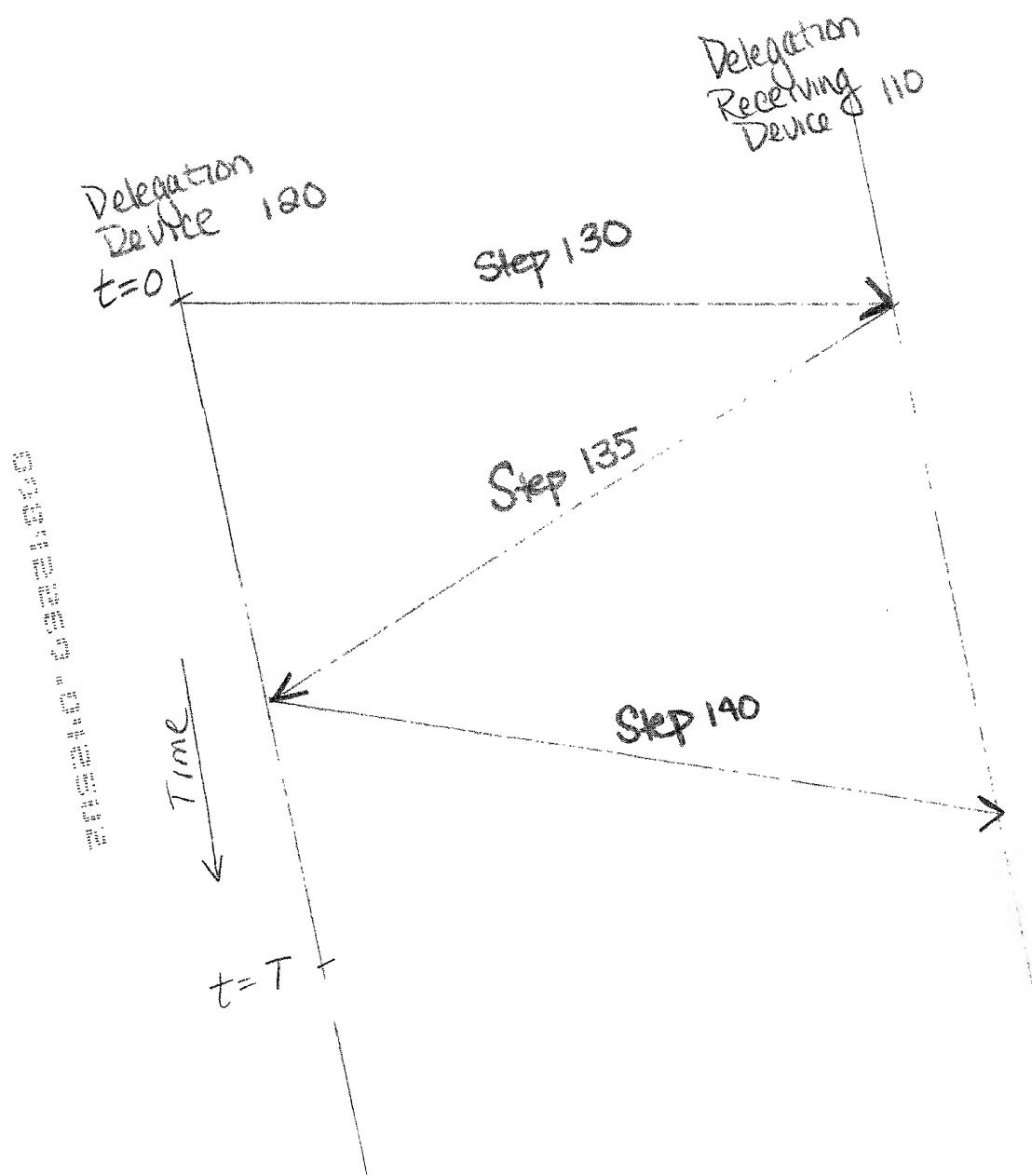


Fig. 1A



F167. 1B



Data Structure Definitions in ASN.1

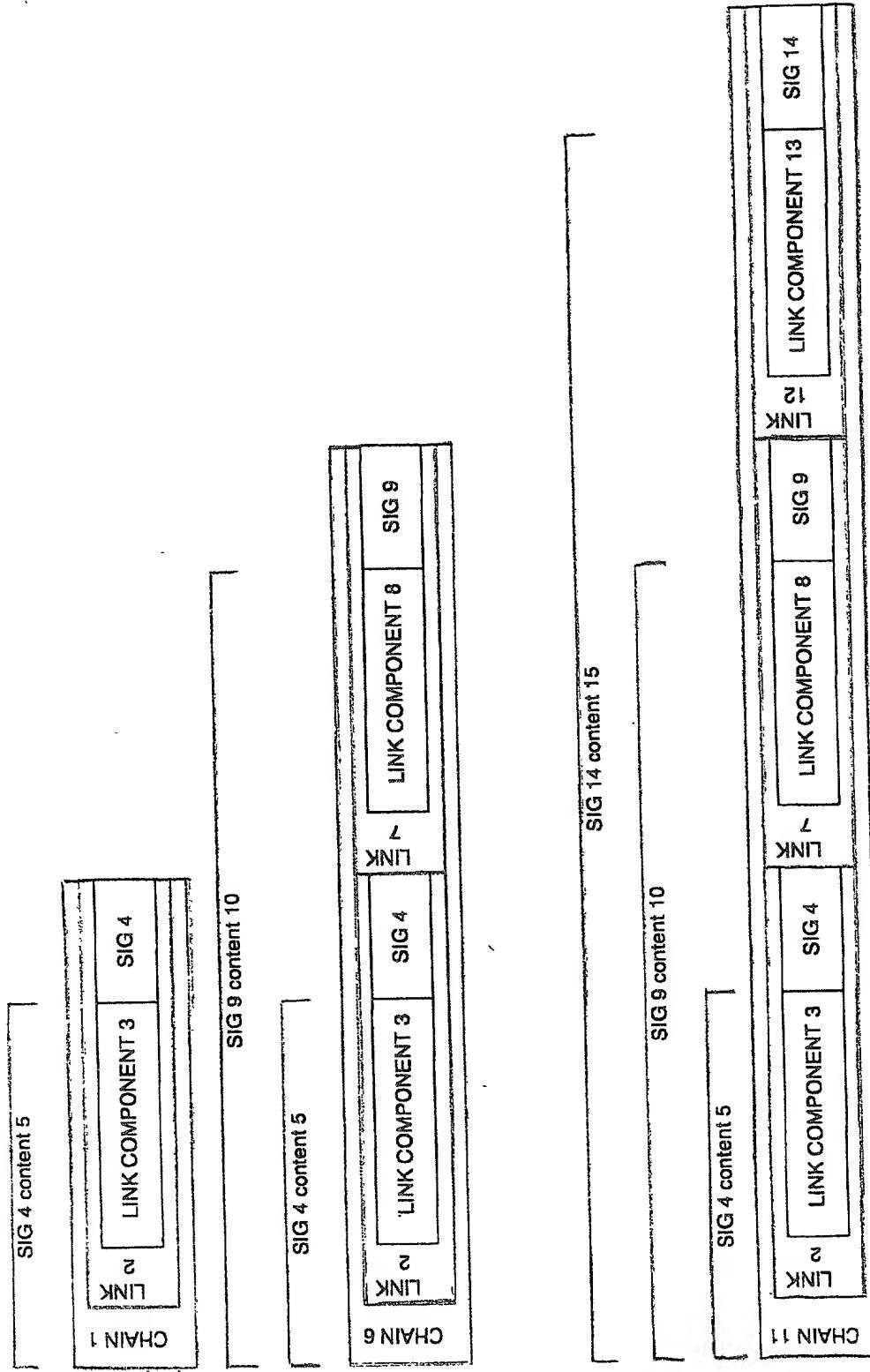
```
permissionChain ::= SEQUENCE OF permissionLink

permissionLink ::= SEQUENCE {
    permissionLinkComponent permissionLinkComponent,
    Signature OCTET STRING
}

permissionLinkComponent ::= SEQUENCE {
    Name OCTET STRING,
    Uri OCTET STRING,
    Description OCTET STRING,
    Note OCTET STRING,
    Version INTEGER,
    Src_p INTEGER,
    Src_q INTEGER,
    Src_g INTEGER,
    Src_pub INTEGER,
    Src_x509cert OCTET STRING,
    Src_email OCTET STRING,
    Subj_p INTEGER,
    Subj_q INTEGER,
    Subj_g INTEGER,
    Subj_pub INTEGER,
    Subj_x509cert OCTET STRING,
    Subj_email OCTET STRING,
    Delegate BOOLEAN,
    Read BOOLEAN,
    Write BOOLEAN,
    validFrom GeneralizedTime,
    validTo GeneralizedTime
}
```

Fig. 1C

Fig. 1D



System Overview

Fig.2A

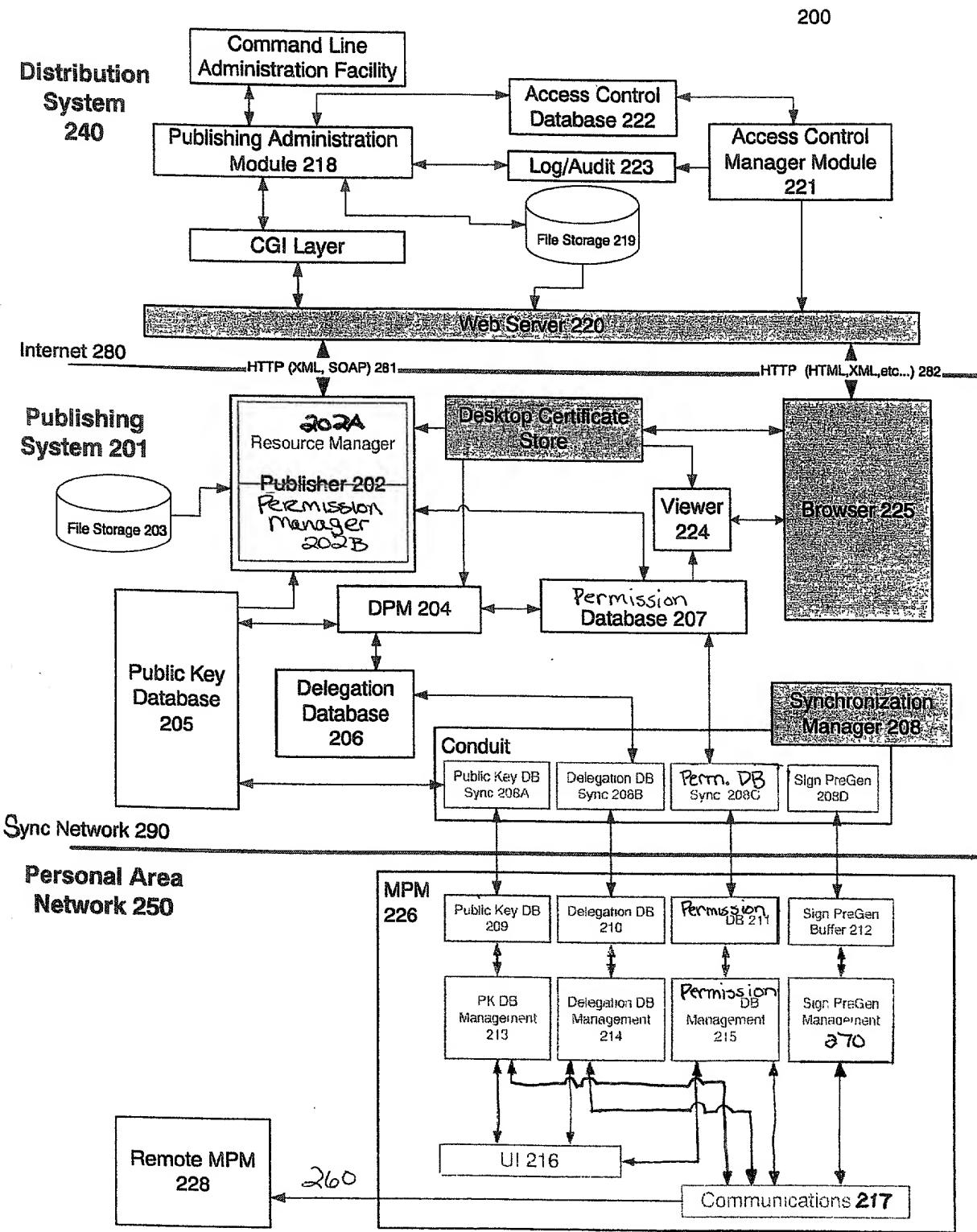
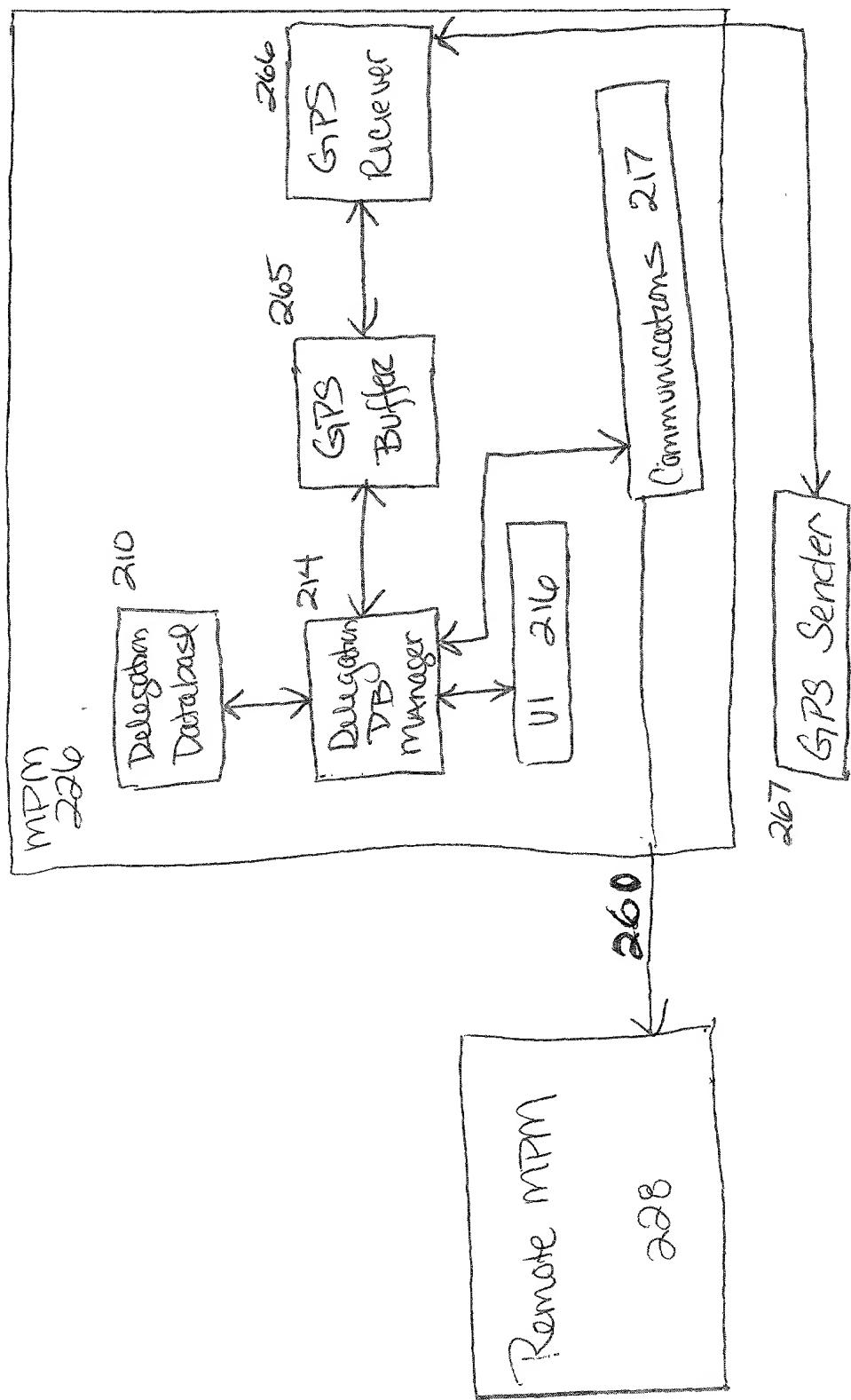
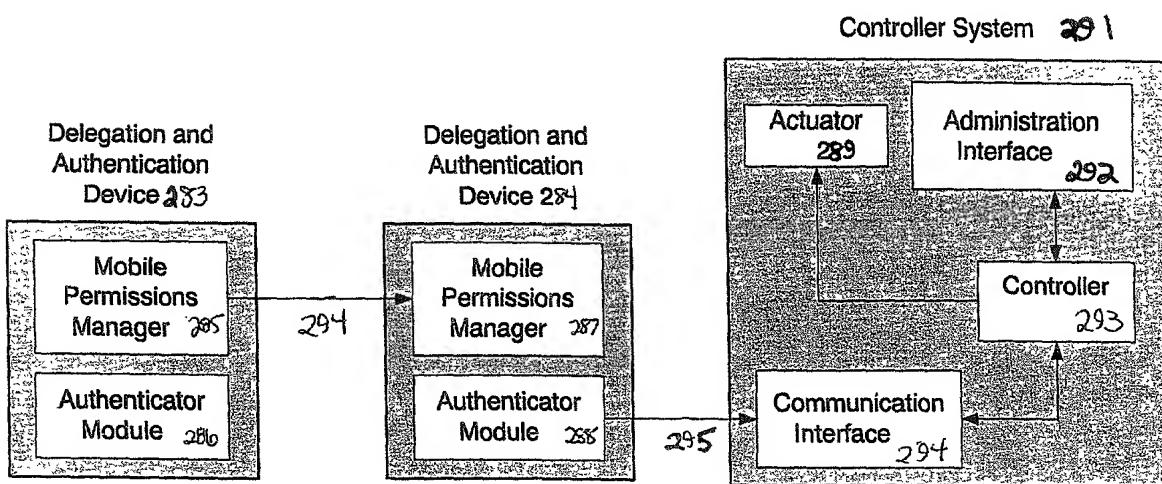


Fig. 8B



F16.2C



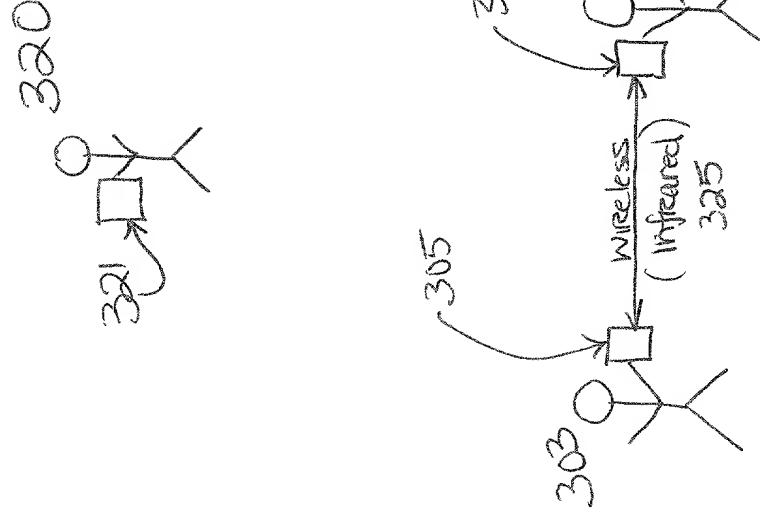


Fig. 34

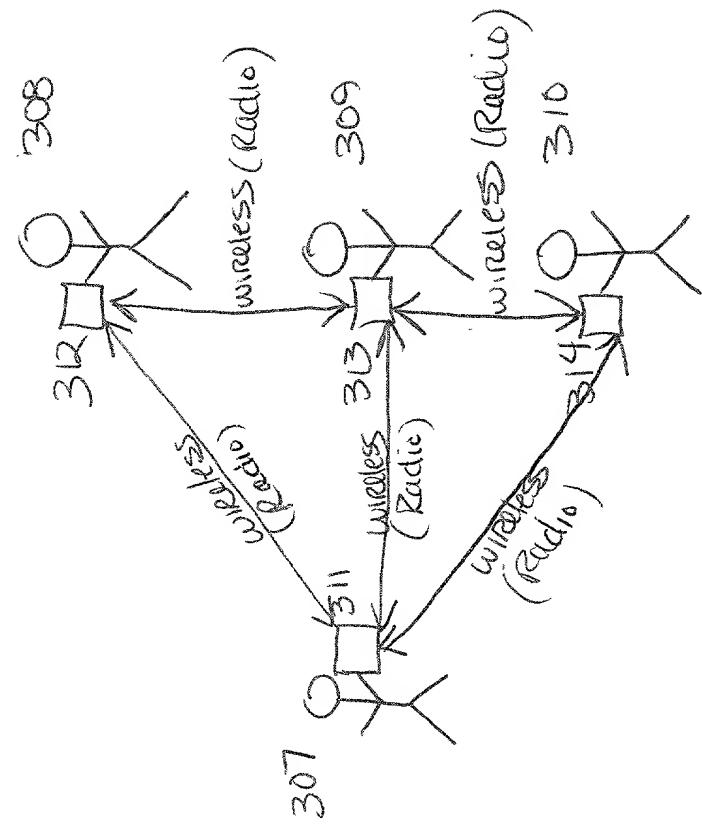


Fig. 3B

Fig. 4

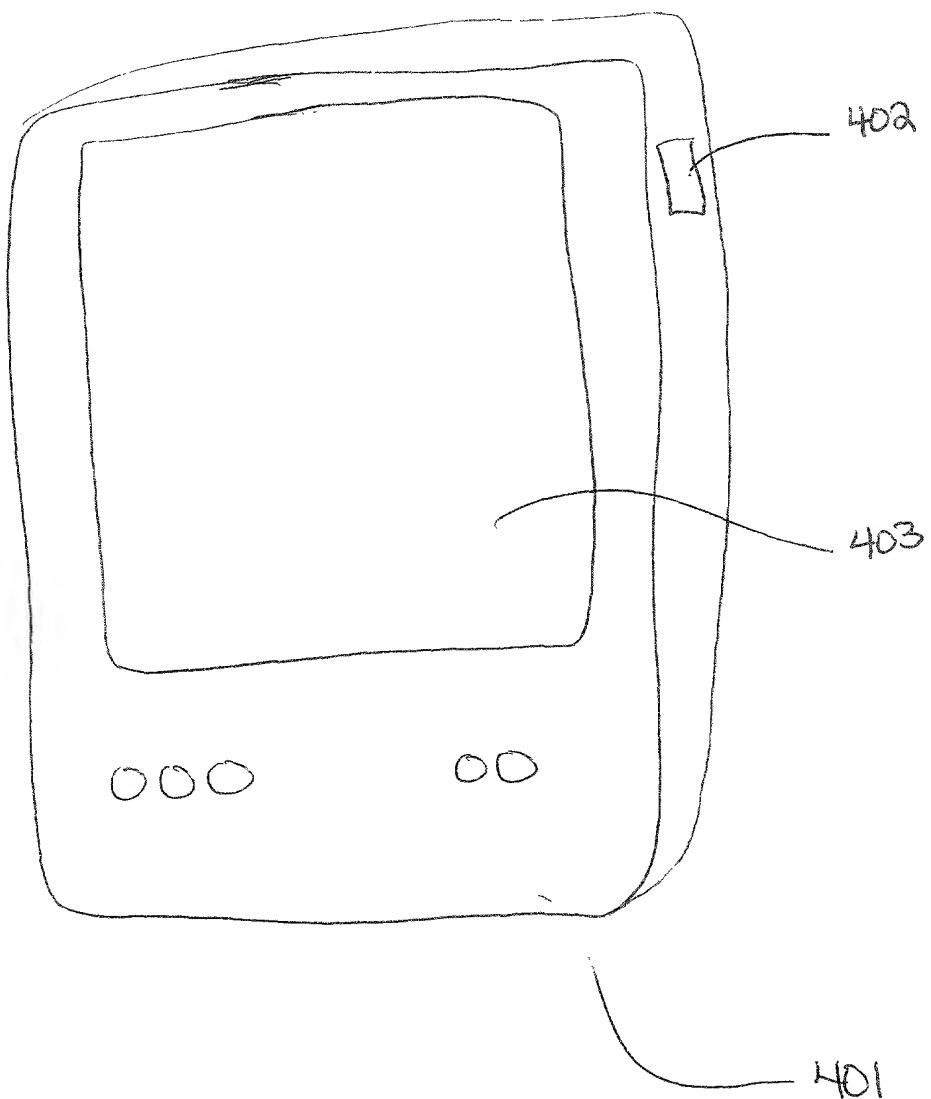
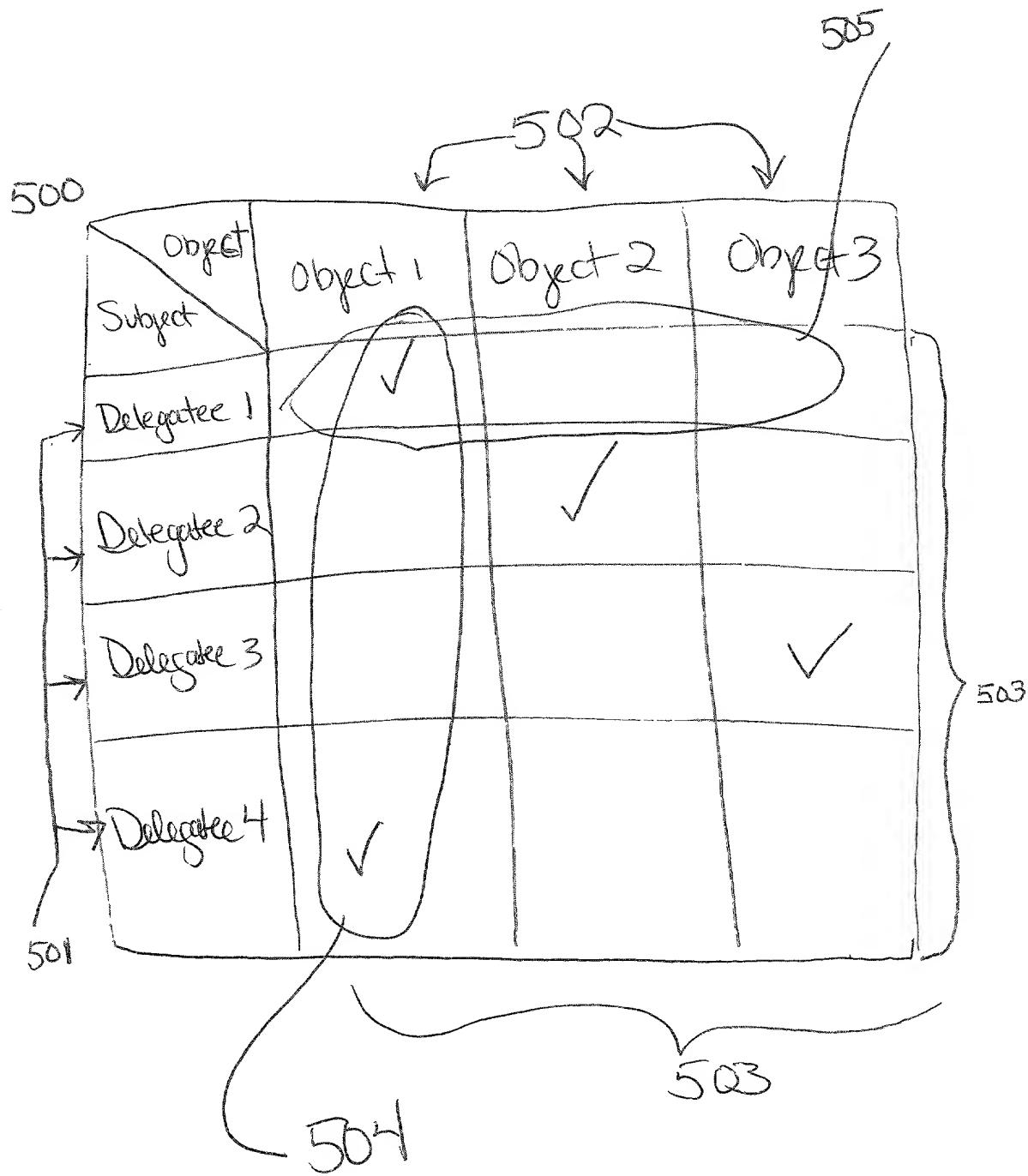
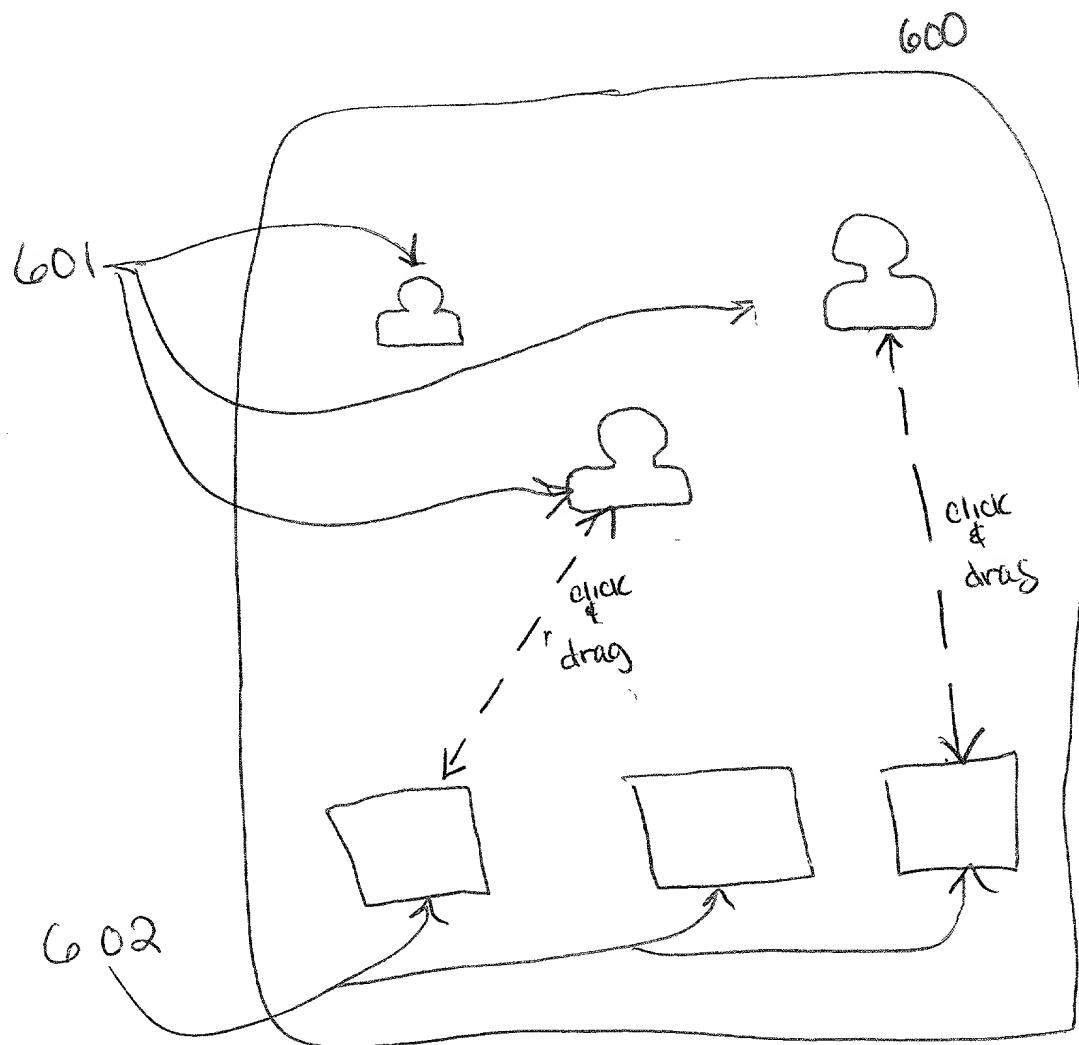


FIG. 5



F16.4



Sending Permission as part of a header within an HTTP request.
(see <http://www.ietf.org/rfc/rfc2616.txt>).

```
GET /resource/ HTTP/1.1
Accept: image/gif, image/x-bitmap, image/jpeg, image/pjpeg,
application/vnd.ms-powerpoint, application/vnd.ms-excel,
application/msword, */
Accept-Language: en-us
Accept-Encoding: gzip, deflate
User-Agent: Mozilla/4.0 (compatible; MSIE 5.01; Windows NT 5.0)
Vchain: 50U+F61olMMJzRmZs6QNRhx1UE3artX4ax56AJdJxYR7dzyPNglg+cwEOzzjT+
v8ywbpuyugQvj1uZSSVDfkbe/C+NV8sLfp5d3eaTykzeP+siJx17wg3njzn2mLOnRKrXw
WuX6gW3gR76zVuIzOy1wS9bZzSiu+ImN/SaHRS3eqBFPL7Ye01Jzin4jH81046kLpiXB+O
C1oFRqsCmy5/JCrgvR01Rw2rolg6uXgK8xKdybfSPXPKjx4w1A0d9GdGAqRycOGFoXtyzpS
+bASvdt2UJMssCXAKTw5bi+sUzuTbeX2xPJwDsPvuevICZHVGwnqJemvVUrH1DdhnmZyZF
ZfTqeZ6sYZCvsAiCYghRB6fK9JJV/vj9CzF1vfyFPfYYH75ONHjMdDr5qrVbSm4hK2GFZ
IVPnyxYHwTafKKhbU2aQ5KFZbBGMwIikfBRMVfsqz3hpKa5Pd+NZELIwQ4FWlWgrIzL+jw
Le1CfDk2V4SntsK+CFxBVGbU6dWpQYe2x0Bjat5yjbgYfXdz/vXfnxjHoAiUYwt4ZNwK0+
UG78+E1rtw2UoIUPuQoCpCXh9EMeaACc7gSKY2KfuY10FeCHZ00c16a4M82DUtE6JhrX6U
fR08r9QmxVnZu0/MW2vbWNS6rCUvsw78zWpChy3V1lbxTyofETq9WofZ3u+bomL8WgchTd
/QPyHMaky37tXEhrjZxUkgJtI0oA12kVaTDERIwBnhQYM3mp48n8wCq8qH2JP78DSOQwC
HMolJQPmjfaOxaCR5wE9mhJGHjtTOpxX3GkLN1NuZYq7tbxYznGNJ2VgwUPpCQppohcWmF
B17790cTc59zt9kV6A3MyeI/lZCP5iW+vjPEa6h5CWhqHDT3mvDXSAJ8Wx66XiIEJmtzil
1Dpnt0phJpCDAPyM2X02bJGrPnimSbUsaELQWdMmtUyczy5TDIlpqjKMNUlytlHdmN2jly
2+hHplkgxxXKhi1I/JtC97X2GBbm7n1UnICG6sAbxq61BHx5sNs1TzWChjYhtFlMuCeZT
Umf1LBgGPgh6Uv3oyUVoasRmsKi6qbqweDdxXfZD3uFR/iJNLUzwnt3/PJwtPjPjHJ+Sia
/hkB9+a1MZXfSkMQaBpAE7/BfzRhs+09fDTL+kBFd00w0fvkTo9AlfVF99wiAJ0hZt7q+e
GWkPi5SRO+9/T710r7wNvC9NELRfsziq/v+8LM179yjjCm0chaZTv09iA8i28gQotzjdFX
1fE3vL0wmrP/61GSfqZhWc2Ho/m7FmqA9pJQVCRsVXXQOSWAzdPC3a75Jxyoa8hHDxg1uK
RaAF1xQboHeR1Z9GQHoi9ucQORhrbiu0S20Afj99QjmszP3gQ64Pw+EakfS+lYQYbauY9
Z+8bRf+G8JnhRZIvcyu5y1RW74goguqs6BSf6NcuC3rBJhf30xn151/a8SraFtzUR4rv+e
qjQyE=
Connection: Keep-Alive
Host: www.websitexyz.com
HTTP/1.0 200 OK
Content-Length: 16485
Content-Type: text/html
<html><head><title>WebsiteXYZ</title>
...

```

FIG. 7 -

*Sending the permission as part of a “cookie” within an HTTP request
(see <http://www.ietf.org/rfc/rfc2616.txt> and <http://www.ietf.org/rfc/rfc2109.txt>).*

```
GET /resource/ HTTP/1.1
Accept: image/gif, image/x-bitmap, image/jpeg, image/pjpeg,
application/vnd.ms-powerpoint, application/vnd.ms-excel,
application/msword, /*
Accept-Language: en-us
Accept-Encoding: gzip, deflate
User-Agent: Mozilla/4.0 (compatible; MSIE 5.01; Windows NT 5.0)
Cookie: Vchain=50U+F61o1MMJzRmZs6QRNrhx1UE3artX4ax56AJdJxYR7dzyPNglg+cw
EOzzjT+v8ywbpuyuugQvj1uZSSVDfkbe/C+NV8sLfp5d3eaTykzeP+siJx17wg3njzn2mL
OnRKrXwWuX6gW3gR76zVuIz0ylwS9bZzSiu+ImN/SaHRS3eqBFPL7Ye01Jzin4jH81046k
LpiXB+OCloFRqsCmy5/JCrgvR01Rw2rolg6uXgK8xKdybfSXPkJx4w1A0d9GdGAqRycOGF
oXtyzpS+bASvdt2UJMssCXAKTw5bi+sUzuTbeX2xPJwDsPvuevICZHVGwnqJemvVUrH1DD
hnMzYzFZfTqeZ6sYZCvsAiCYghRB6fK9JJV/vj9CzF1vfyFPfYYH75ONHjMdDr5qrVbSm
4hK2GFZIVPnyxYHwTafKhhbU2aQ5KFZbBGMwIikfBRMVfsqz3hpKa5Pd+NZELiWQ4FWlWg
rIzL+jwLe1CfDk2V4SntsK+CFxBVGbU6dWpQYe2x0Bjat5yjbgYfxdz/vXfnxjHoAiUYwt
4ZNwK0+UG78+E1rtw2UoIUPuQoCpCxh9EMeaAcc7gSKY2KfuY10FeCHZ00c16a4M82Dute
6JhrX6Ufr08r9QmxVnZu0/MW2vbWNS6rCuvsW78zWpChy3V11bxTyofETq9WofZ3u+bomL
8WgchTd/QPyHMaKy37tXEhrjZxUkgJtI0oA12kVaTDERIwBnhQYM3mzp48n8wCq8qH2JP7
8DSOQwCHMolJQPmjfaOxaCR5wE9mhJGHjtTOpxX3GkLN1NuZYq7tbxYznGNJ2VgwUPpCOp
pohcWmFB1779OcTc59zt9kV6A3MyeI/lZCP5iW+VjPEa6h5CWhqHDT3mvDXSAJ8Wx66XiI
EJmtzillDpnt0phJpCDAPyM2XO2bJGrPnimSbUsaELQwdMmtUycz5TDIlpqjKMNUlytlH
dmN2jly2+hHplkzgxxXKhi1I/JtC97X2GBbm7nlUnICG6sAbxq61BHx5sNs1TzWChjYhtF
1MuCeZTUmf1LBgGPgh6Uv3oyUVoasRmsKi6qbwDdxXfZD3uFR/iJNLUzwnt3/PJwtPjP
JHJ+SIA/hkB9+a1MZXfSkMQaBpAE7/BfzRHs+09fDTL+kBFdO0w0fvkTo9AlfVF99wiAJ0
hZt7q+eGWkPi5SRO+9/T710r7wNvc9NELRfsziq/v+8LM179yjjCm0chAZTv09iA8i28gQ
otzjdFX1fE3vL0wmrp/61GSfqZhWc2Ho/m7FmqA9pJQVCRsVXXQOSWAZdPC3a75Jxyoa8h
HDxg1uKRaAF1xQboHeR1Z9GQHoi9ucQORhrbIu0S20Afj99QjmszP3gQ64Pw+EakfS+1Y
QYbauY9Z+8bRf+G8JnhRZIvcyu5y1RW74goguqs6BSf6NcuC3rBjhf30xn151/a8SraFtz
UR4rv+eqjQyE=
Connection: Keep-Alive
Host: www.websitexyz.com
HTTP/1.0 200 OK
Content-Length: 16485
Content-Type: text/html
<html><head><title>WebsiteXYZ</title>
...
```

FIG. 8

Sending the permission as part of a URL

[http://www.websitexyz.com/resource/?Vchain=50U+F61o1MMJzRmZs6QNRhx1UE3a...
rtX4ax56AJdJxYR7dzyPNg1g+cwE0zzjT+v8ywbpvyugQvj1uZSSVDfkbe/C+NV8sLfp5d
3eaTykzeP+siJx17wg3njzn2mL0nRKrXwWuX6gW3gR76zVuIz0y1ws9bZzSiu+ImN/SaHRS
3eqBFPL7Ye0lJzin4jh8l046kLpiXB+OCloFRqsCmy5/JCrgvR01Rw2rolg6uXgK8xKdybf
SXPkJx4w1A0d9GdGAqRycOGFoXtyzpS+bASvdt2UJMssCXAKTw5bi+sUzuTbeX2xPJwDsPv
uevICZHVGwnqJemvVUrH1DDhnMzYzFZftTqeZ6sYZCvsAiCYghRB6fK9JJV/vj9Czf1vfyF
PfYYH75ONHjMdDr5qrVbSm4hK2GFZIVPnyxYHwTafKHhbU2aQ5KFZbBGMwIikfBRMVfsqz3
hpKa5Pd+NZELIwQ4FWlWgrIzL+jwLe1CfDk2V4SntsK+CFxBVGBu6dWpQYe2x0Bjat5yjb9
YfXdz/vXfnxjHoAiUYwt4ZNwK0+UG78+E1rtw2UoIUPuQoCpCxh9EMeaAcc7gSKY2KfuY10
FeCHZ00c16a4M82DUtE6JhrX6UF08r9QmxVnZu0/MW2vbWNs6rCuvs78zWpChy3V1lbxt
yofETq9WofZ3u+b6mL8WgchTd/QPyHMaKy37tXEhrjZxUkgJtI0oA12kVaTDERIwBnhQYM3
mzp48n8wCq8qH2JP78DSOQwCHMolJQPmjfaOxaCR5wE9mhJGHjtTOpXx3GkLN1NuZYq7tbx
YznGNJ2VgwUPpCOppohcWmFB17790cTc59zt9kV6A3MyeI/lZCP5iW+VjPEa6h5CWhqHDT3
mvDXSAJ8Wx66XiIEJmtzi11Dpnt0phJpCDAPyM2XO2bJGrPnimSbUsaELQWdMmtUyczy5TD
IlpqjKMNUlytlHdmN2j1y2+hHplkgxxXKhi1I/JtC97X2GBbm7n1UnICG6sAbxq61BHX5s
Ns1TzWChjYhtFlMuCeztUmf1LBgGPgh6Uv3oyUVoasRmsKi6qbqweDdxXfZD3uFR/iJNLUz
wnt3/PJwtPJpJHJ+SIa/hkB9+alMZXfskMQaBpAE7/BfzRHs+09fdTL+kBFdO0w0fvkTo9A
1fVF99wiAJ0hZt7q+eGWkPi5SRO+9/T710r7wNvC9NELRfsziq/v+8LM179yjjCm0chAZTv
09iA8i28gQotzjdFX1fE3vL0wmrP/61GSfqZhWc2Ho/m7FmqA9pJQVCRsVXXQOSWAZdPC3a
75Jxyoa8hHDxg1uKRaAF1xQboHeR1Z9GQHoi9ucQORhrbIu0S2OAfj99QjmszP3gQ64Pw+
EakfS+1YQYbauY9Z+8bRf+G8JnhRZIvcyu5y1RW74goguqs6BSf6NcuC3rBJhf30xn151/a
8SraFtzUR4rv+eqjQyE=](http://www.websitexyz.com/resource/?Vchain=50U+F61o1MMJzRmZs6QNRhx1UE3a...)

F16. 9

Fig. 10

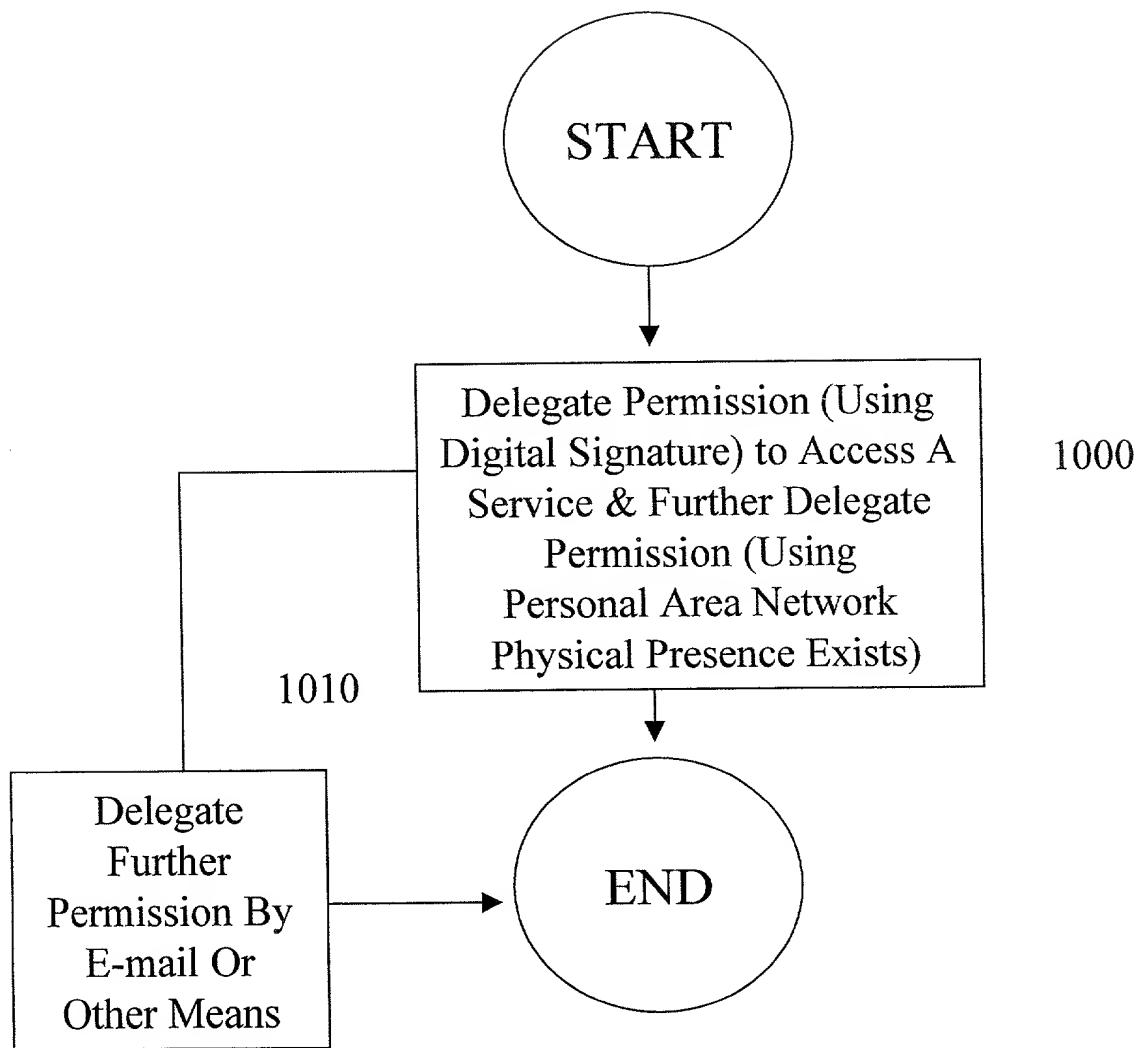


Fig. 11

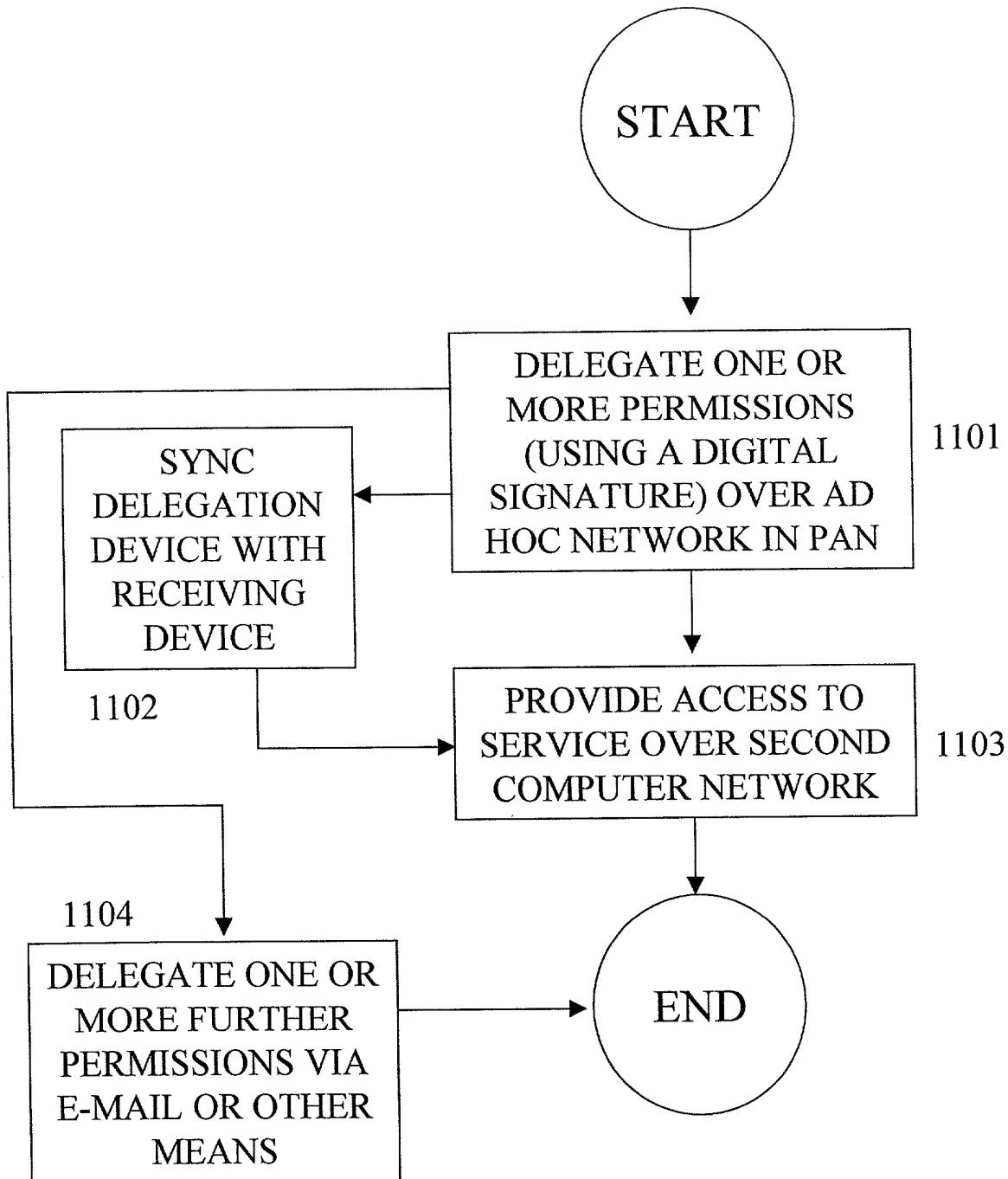


Fig. 12

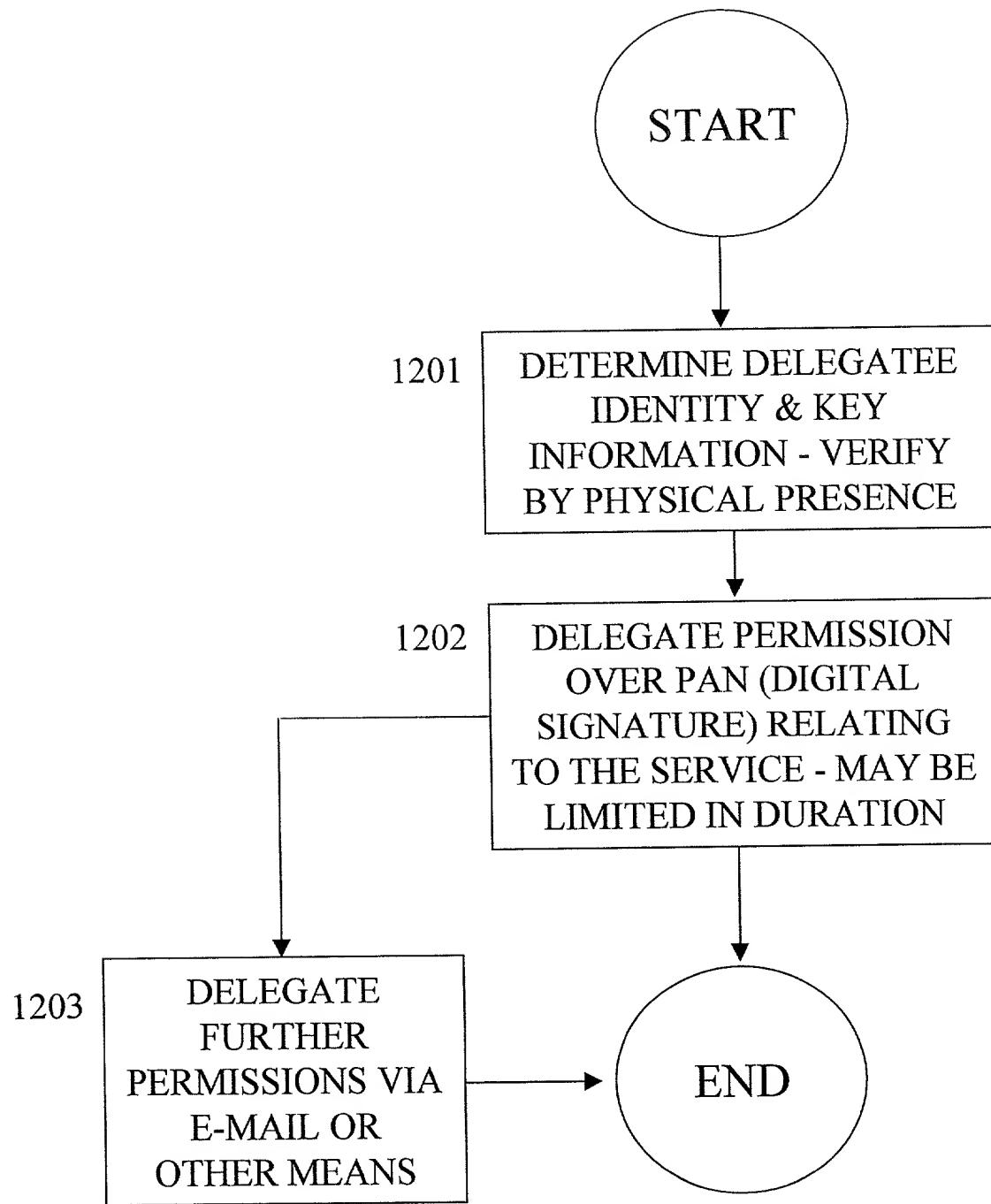


Fig. 13

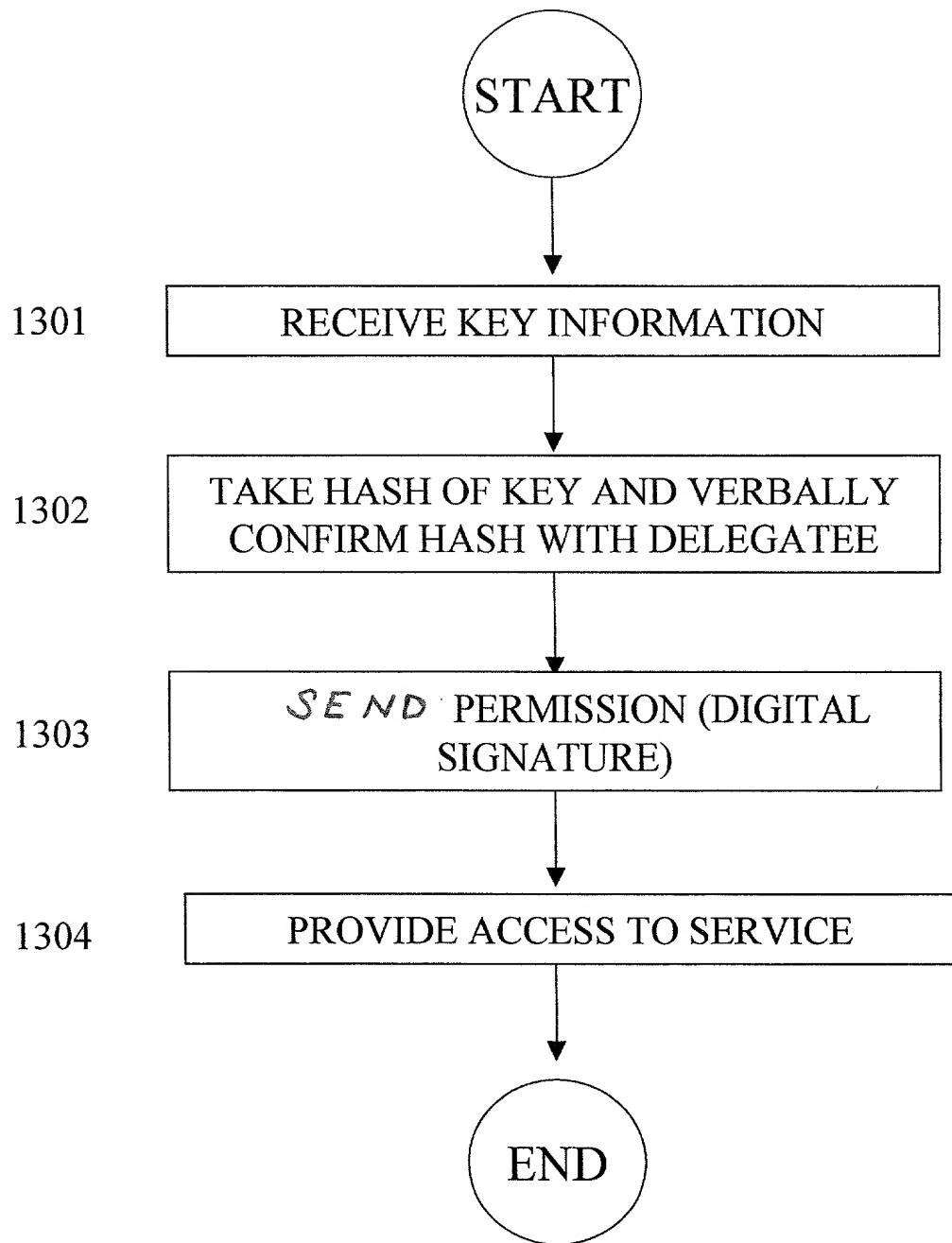


Fig. 14

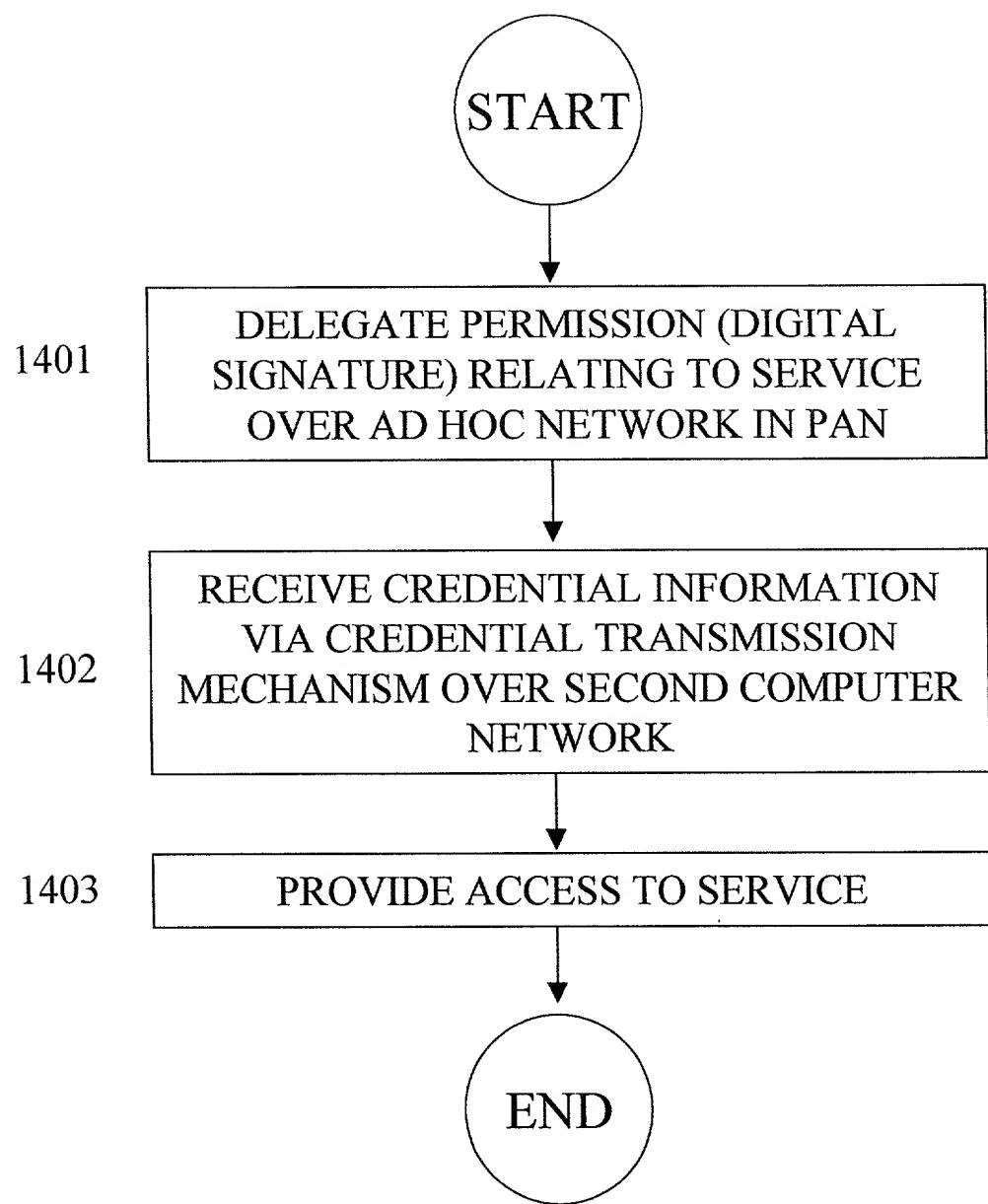


Fig. 15

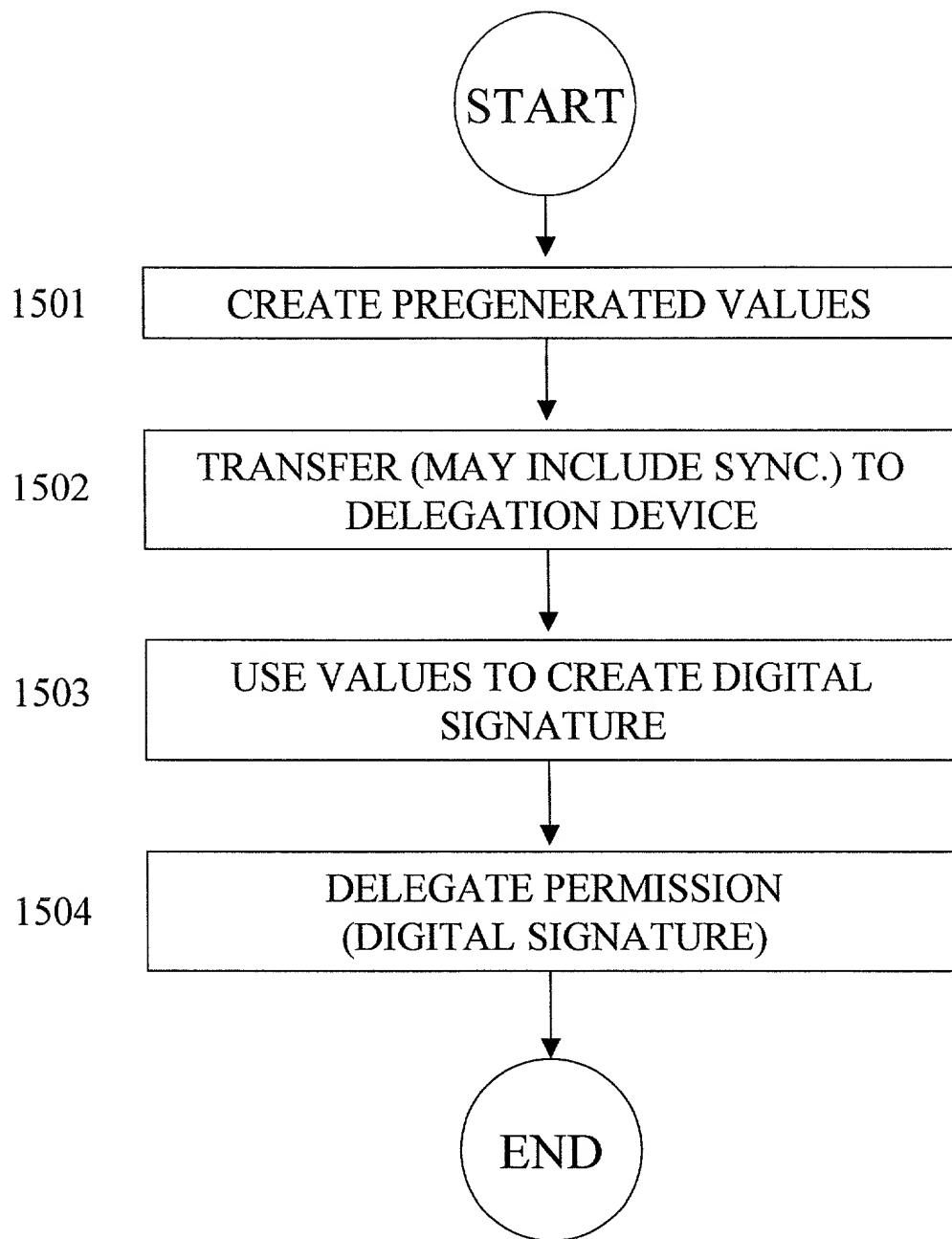


Fig. 16

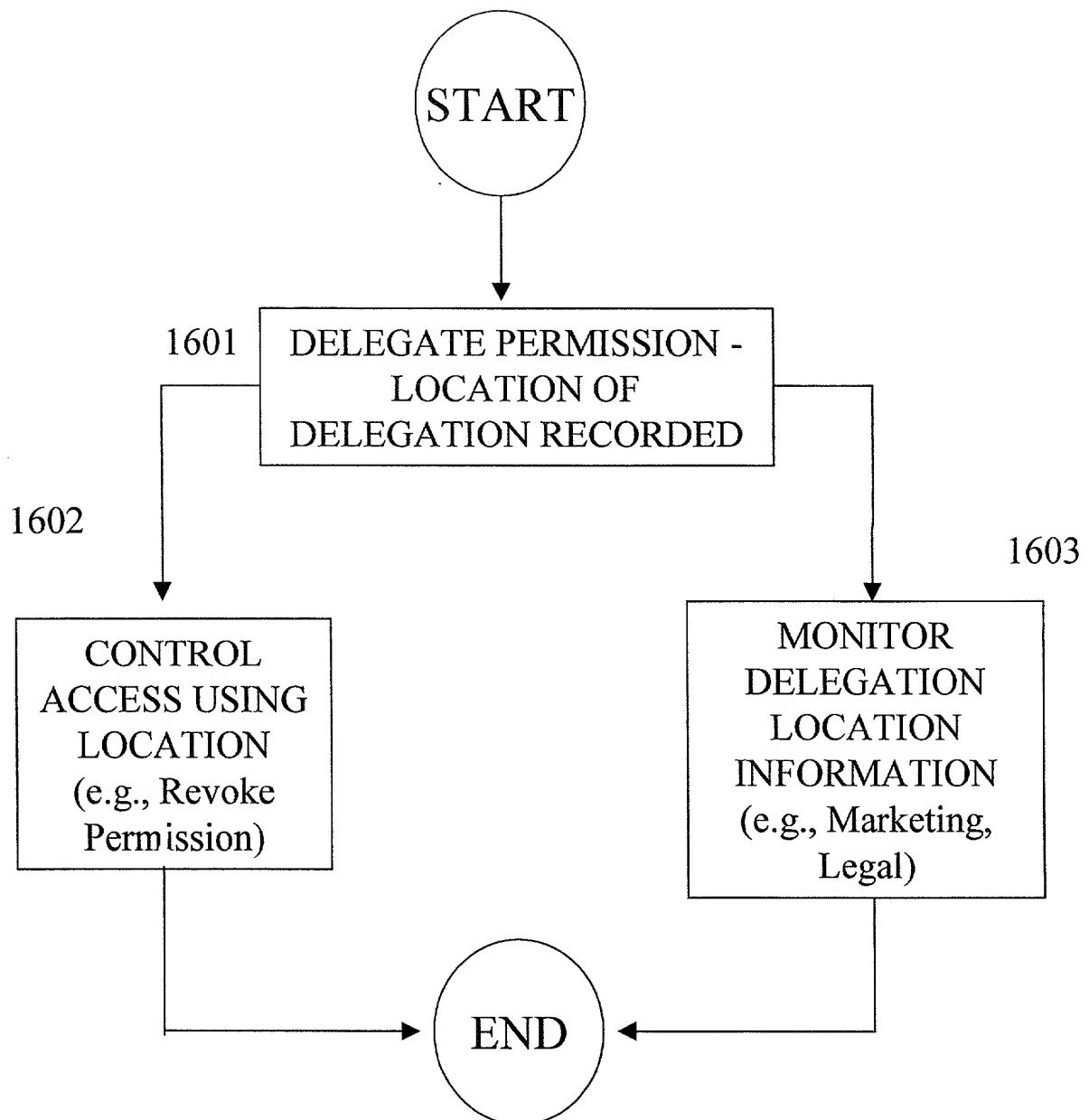


Fig. 17

